

**MaineGeneral Health
North Augusta Cancer Center
Kennebec County
Augusta, Maine
A-935-71-A-N**

**Departmental
Findings of Fact and Order
Air Emission License**

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

MaineGeneral Health (MaineGeneral) of Augusta, Maine has applied for an Air Emission License permitting the construction and operation of emission sources associated with their North Augusta Cancer Center.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Boiler #1	3.3	23.5	#2 fuel oil, 0.35%	1
Boiler #2	3.3	23.5	#2 fuel oil, 0.35%	1
Generator #1	4.4	32	Diesel, 0.05%	2

C. Application Classification

A new source is considered a major source based on whether or not expected emissions exceed the "Significant Emission Levels" as defined in the Department's regulations. The emissions for the new source are determined by the maximum future license allowed emissions, as follows:

<u>Pollutant</u>	<u>Max. Future License Tons/year (TPY)</u>	<u>Sig. Level (TPY)</u>
PM	0.56	100
PM ₁₀	0.56	100
SO ₂	1.92	100
NO _x	6.16	100
CO	1.24	100
VOC	0.41	50

The Department has determined the facility is a minor source and the application has been processed through Chapter 115 of the Department's regulations.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas. BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boilers #1 and #2

MaineGeneral is proposing to operate two distillate oil fired boilers, Boiler #1 and Boiler #2. Each boiler has a maximum heat input capacity of 3.3 MMBtu/hr. Based on their size, neither boiler is subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989. Both boilers will exhaust to a common stack (stack #1) approximately 45 feet above ground level.

MEDEP Chapter 101 establishes opacity limits for emissions from several categories of air emission sources. Based on Chapter 101, visible emissions from stack #1 shall not exceed 30% opacity on a 6-minute block average basis, except for no more than three 6-minute block averages in a 3-hour period.

MEDEP Chapter 115 requires a BACT analysis for each new emission unit at a new minor source. The analysis takes into account energy, environmental and economic impacts.

A summary of the BACT determination for the Boilers #1 and #2 (limits expressed for each boiler individually) is the following:

<u>Pollutant</u>	<u>BACT Determination</u>	<u>Emission Limit</u>
PM	Proper operation and maintenance.	0.08 lb/MMBtu
SO ₂	Low sulfur distillate fuel	0.36 lb/MMBtu
NO _x	Distillate fuel oil	0.25 lb/MMBtu
CO	Proper operation and maintenance.	5 lb/1000 gallons
VOC	Proper operation and maintenance.	0.34 lb/1000 gallons

The BACT analysis is discussed in further detail for each pollutant in the following sections:

1. Particulate Matter (PM), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

Emissions of PM, CO and VOC from Boilers #1 and #2 are so minimal that they can be considered practically negligible. Add-on emission control equipment is not economically practical. MaineGeneral will meet BACT for PM, CO and VOC through proper boiler operation and maintenance to meet emission limits of 0.08 lb/MMBtu for PM, 5 lb/1000 gallons for CO and 0.34 lb/1000 gallons for VOC. These emission limits are based on BACT for PM, and on AP-42 data for distillate oil fired boilers for CO and VOC.

2. Sulfur Dioxide (SO₂)

Potential control strategies for SO₂ include SO₂ scrubbing techniques and the use of low sulfur oil. For boilers of this size and fuel type, SO₂ scrubbing systems are not economically practical, as the uncontrolled SO₂ emission levels are already very low. The boilers will fire #2 fuel oil with a sulfur content not to exceed 0.35% by weight. MaineGeneral will meet BACT for SO₂ by firing low sulfur fuel with a maximum sulfur content of 0.35%.

3. Nitrogen Oxides (NO_x)

Potential control strategies for NO_x include Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), flue gas recirculation (FGR) and low-NO_x burners. SCR and SNCR have been employed on utility and large industrial boilers for NO_x control, but are not technically feasible for small boilers of the type MaineGeneral is proposing to install. The maximum annual NO_x emissions from both Boiler #1 and Boiler #2 are not expected to exceed 1.5 tons/year, based on the facility's licensed fuel limit. At NO_x levels this low, the incremental reduction from FGR or low NO_x burners is negligible. MaineGeneral will meet BACT for the boilers by firing distillate fuel to meet a NO_x limit of 0.25 lb/MMBtu.

C. Generator #1

MaineGeneral is proposing to operate a 400kW emergency generator, Generator #1, with a maximum heat input rating of 4.4 MMBtu/hr. The generator will only be operated during emergencies and for testing and maintenance purposes. It will fire diesel fuel with a sulfur content not to exceed 0.05% by weight. Generator #1 shall have an operating limit of 500 hours per year, on a 12-month rolling total. The generator will exhaust to stack #2.

An emergency shall be defined according to MEDEP Chapter 148:

“Emergency” means an electric power outage due to a failure of the electrical grid, on-site disaster, local equipment failure, or public service emergencies such as flood, fire, natural disaster. Emergency shall also mean when the imminent threat of a power outage is likely due to failure of the electrical supply or capacity deficiencies result in a deviation of voltage from the electrical supplier to the premises of three percent (3%) above or five percent (5%) below standard voltage.

Generator #1 may be subject to NSPS Subpart IIII, which was proposed by EPA on July 11, 2005, but has not yet been promulgated in the Federal Register as of this writing. Subpart IIII would establish emission standards for stationary compression ignition internal combustion engines. The standards are phased in over several years and have tiers with increasing stringency levels. For emergency engines ranging from 225 kW to less than 450 kW and purchased after April 2006, Tier 3 emission standards would apply.

MEDEP Chapter 101 establishes opacity limits for emissions from several categories of air emission sources. Based on Chapter 101, visible emissions from stack #2 shall not exceed 20% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.

MEDEP Chapter 115 requires a BACT Analysis for each new emission unit at a new minor source. The analysis takes into account energy, environmental and economic impacts.

A summary of the BACT Determination for Generator #1 is the following:

<u>Pollutant</u>	<u>BACT Determination</u>	<u>Emission Limit</u>
PM	Proper operation and maintenance, hour limit	0.12 lb/MMBtu
SO ₂	Low sulfur diesel fuel, hour limit	0.051 lb/MMBtu
NO _x	Hour limit	4.41 lb/MMBtu

CO	Proper operation and maintenance, hour limit	0.95 lb/MMBtu
VOC	Proper operation and maintenance, hour limit	0.35 lb/ MMBtu

The BACT analysis is discussed in further detail for each pollutant in the following sections:

1. Particulate Matter (PM), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

PM, CO and VOC emissions from diesel-fired engines are controlled through proper operation and maintenance. MaineGeneral will meet BACT for Generator #1 for PM, CO and VOC through proper operation and maintenance and by meeting the license limit of 500 hours of operation per year to meet emission limits of 0.12 lb/MMBtu for PM, 0.95 lb/MMBtu for CO and 0.35 lb/MMBtu for VOC. These emission limits are based on MEDEP Chapter 103 for PM, and on AP-42 data for diesel-fired engines for CO and VOC.

2. Sulfur Dioxide (SO₂)

The emergency generator will be fired with low sulfur diesel fuel (0.05% maximum sulfur content) and will only be operated in the event of an emergency or for testing or maintenance purposes not to exceed 500 hours/year. MaineGeneral will meet BACT for Generator #1 by firing low sulfur diesel fuel in the unit and by meeting the license limit of 500 hours of operation per year.

3. Nitrogen Oxides (NO_x)

MaineGeneral will meet BACT for Generator #1 by meeting the license limit of 500 hours of operation per year.

D. Annual Emissions

MaineGeneral shall be restricted to the following annual emissions, based on a 12 month rolling total. Annual emissions are calculated based on the following:

- 75,000 gallons/year of #2 fuel (0.35% sulfur by weight) to be fired in Boilers #1 and #2; and,
- 500 hours/year of operation of Generator #1, firing diesel fuel with a sulfur content of 0.05% by weight.

**Total Licensed Annual Emission for the Facility
Tons/year**

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers #1 and #2	0.42	0.42	1.86	1.32	0.19	0.02
Generator #1	0.14	0.14	0.06	4.84	1.05	0.39
Total TPY	0.56	0.56	1.92	6.16	1.24	0.41

III.AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-935-71-A-N subject to the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).

- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]

- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [MEDEP Chapter 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [MEDEP Chapter 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for

the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]

- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) **Boilers #1 and #2**

- A. Total fuel use for Boilers #1 and #2 shall not exceed 75,000 gallons/year of #2 fuel oil with a maximum sulfur content not to exceed 0.35% by weight. Compliance shall be demonstrated by fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. Records of annual fuel use shall be kept on a 12-month rolling total basis. [MEDEP Chapter 115, BPT]
- B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.08	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler #2	PM	0.08	MEDEP, Chapter 103, Section 2(B)(1)(a)

- C. Emissions shall not exceed the following [MEDEP Chapter 115, BPT]:

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.27	0.27	1.17	0.83	0.12	0.01
Boiler #2	0.27	0.27	1.17	0.83	0.12	0.01

- D. Visible emissions from stack #1 shall not exceed 30% opacity on a 6-minute block average, except for no more than three 6-minute block averages in a continuous 3-hour period. [MEDEP Chapter 101]

(17) **Generator #1**

- A. MaineGeneral shall limit the Emergency Generator to 500 hours/year of operation (based on a 12-month rolling total). An hour meter shall be maintained and operated on the Emergency Generator. [MEDEP Chapter 115, BPT]
- B. Generator #1 shall be operated for emergency purposes only or for short periods to exercise the unit and to keep it in operating order. A log shall be maintained and updated each time the generator runs, documenting the date, time, and reason for its operation. [MEDEP Chapter 115, BPT]
- C. Generator #1 shall fire diesel fuel oil with a sulfur limit not to exceed 0.05% by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. [MEDEP Chapter 115, BPT]
- D. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.12	MEDEP, Chapter 103, Section 2(B)(1)(a)

- E. Emissions shall not exceed the following [MEDEP Chapter 115, BPT]:

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.53	0.53	0.23	19.34	4.17	1.54

- F. Generator #1 may be subject to the forthcoming NSPS 40 CFR Part 60, Subpart IIII. Once Subpart IIII is finalized and promulgated, MaineGeneral shall comply with all applicable requirements of 40 CFR Part 60, Subpart IIII, including selecting a generator model that will meet the emission standards established in the Subpart. [40 CFR 60 Subpart IIII]
- G. Visible emissions from the Generator #1 (stack #2) shall not exceed 20% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a 3-hour period. [MEDEP Chapter 101]
- (18) MaineGeneral shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 MRSA §605).
- (19) **Payment of Annual License Fee**
MaineGeneral shall pay the annual air emission license fee within 30 days of March 31st of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: December 15, 2005

Date of application acceptance: December 20, 2005

Date filed with the Board of Environmental Protection: _____

This Order prepared by Rachel E. Pilling, Bureau of Air Quality.